
Nomenclatural Transfers in the Pantropical Genus *Myrsine* (Myrsinaceae)

Jon M. Ricketson

Missouri Botanical Garden, P.O. Box 299, St. Louis, Missouri 63166-0299, U.S.A.
jon.ricketson@mobot.org

John J. Pipoly III

University of Florida-IFAS/Broward County Extension, Parks & Recreation Division,
3245 College Avenue, Davie, Florida 33314-7719, U.S.A. jpipoly@broward.org

ABSTRACT. The names of 14 taxa of *Rapanea* Aubl. are transferred to *Myrsine* L. (Myrsinaceae). The 14 new combinations include: *M. acutiloba* (Mez) Ricketson & Pipoly [\equiv *R. acutiloba* Mez]; *M. amischocarpa* (A. C. Sm.) Ricketson & Pipoly [\equiv *R. amischocarpa* A. C. Sm.]; *M. boivinii* (Mez) Ricketson & Pipoly [\equiv *R. boivinii* Mez]; *M. comorensis* (Mez) Ricketson & Pipoly [\equiv *R. comorensis* Mez]; *M. courboniana* (Mez) Ricketson & Pipoly [\equiv *R. courboniana* Mez]; *M. crassiramea* (A. C. Sm.) Ricketson & Pipoly [\equiv *R. crassiramea* A. C. Sm.]; *M. daphnoides* (Mez) Ricketson & Pipoly [\equiv *R. daphnoides* Mez]; *M. forbesii* (Mez) Ricketson & Pipoly [\equiv *R. forbesii* Mez]; *M. griffithiana* (Mez) Ricketson & Pipoly [\equiv *R. griffithiana* Mez]; *M. hadrocarpa* (A. C. Sm.) Ricketson & Pipoly [\equiv *R. hadrocarpa* A. C. Sm.]; *M. longipes* (A. C. Sm.) Ricketson & Pipoly [\equiv *R. longipes* A. C. Sm.]; *M. polyantha* (A. C. Sm.) Ricketson & Pipoly [\equiv *R. polyantha* A. C. Sm.]; *M. seychellarum* (Mez) Ricketson & Pipoly [\equiv *R. seychellarum* Mez]; and *M. striata* (Mez) Ricketson & Pipoly [\equiv *R. striata* Mez]. Six binomials are lectotypified: *M. boivinii* (Mez) Ricketson & Pipoly; *M. comorensis* (Mez) Ricketson & Pipoly; *M. forbesii* (Mez) Ricketson & Pipoly; *M. griffithiana* (Mez) Ricketson & Pipoly; *M. seychellarum* (Mez) Ricketson & Pipoly; *M. striata* (Mez) Ricketson & Pipoly.

RESUMEN. Se transfieren 14 especies pertenecientes al género *Rapanea* al género *Myrsine*. Las transferencias están enumeradas en la lista a continuación: *M. acutiloba* (Mez) Ricketson & Pipoly [\equiv *R. acutiloba* Mez]; *M. amischocarpa* (A. C. Sm.) Ricketson & Pipoly [\equiv *R. amischocarpa* A. C. Sm.]; *M. boivinii* (Mez) Ricketson & Pipoly [\equiv *R. boivinii* Mez]; *M. comorensis* (Mez) Ricketson & Pipoly [\equiv *R. comorensis* Mez]; *M. courboniana* (Mez) Ricketson & Pipoly [\equiv *R. courboniana* Mez]; *M. crassiramea* (A. C. Sm.) Ricketson & Pipoly [\equiv *R. crassiramea* A. C. Sm.]; *M. daphnoides* (Mez) Ricketson & Pipoly [\equiv *R. daphnoides* Mez]; *M. forbesii* (Mez) Ricketson &

Pipoly [\equiv *R. forbesii* Mez]; *M. griffithiana* (Mez) Ricketson & Pipoly [\equiv *R. griffithiana* Mez]; *M. hadrocarpa* (A.C. Sm.) Ricketson & Pipoly [\equiv *R. hadrocarpa* A. C. Sm.]; *M. longipes* (A. C. Sm.) Ricketson & Pipoly [\equiv *R. longipes* A. C. Sm.]; *M. polyantha* (A. C. Sm.) Ricketson & Pipoly [\equiv *R. polyantha* A. C. Sm.]; *M. seychellarum* (Mez) Ricketson & Pipoly [\equiv *R. seychellarum* Mez]; y *M. striata* (Mez) Ricketson & Pipoly [\equiv *R. striata* Mez]. Se lectotipifican seis binomios: *M. boivinii* (Mez) Ricketson & Pipoly; *M. comorensis* (Mez) Ricketson & Pipoly; *M. forbesii* (Mez) Ricketson & Pipoly; *M. griffithiana* (Mez) Ricketson & Pipoly; *M. seychellarum* (Mez) Ricketson & Pipoly; *M. striata* (Mez) Ricketson & Pipoly.

Key words: Myrsinaceae, *Myrsine*, Philippines, *Rapanea*.

The systematic position and circumscription of the genus *Myrsine* L. (Myrsinaceae) have been discussed in a number of taxonomic works over the last two decades. As summarized regarding transfers into *Myrsine*, Ricketson and Pipoly (2010: 628) stated:

[t]he relationship among *Myrsine* L. and its satellites (inter alia *Rapanea* Aubl. and *Suttonia* A. Rich.) has been a historical focal point for taxonomic contention that has resulted in the treatment of many species as *Rapanea* by regional floristicians, while monographers have determined that the variation in androecial structure among staminate flowers, and the gynoecial for the pistillate support the concept in the more broadly defined, monophyletic concept of *Myrsine*. Regional monographers recognizing the more inclusive concept include Hosaka (1940), Backer & Bakhuizen van den Brink (1965), Smith (1973), Fosberg & Sachet (1975, 1980), Sachet (1975), Li (1978), Wagner et al. (1990), Pipoly & Chen (1995), Pipoly (1996, 2007), Jackes (2005), Takeuchi and

Pipoly (2009), and Ricketson & Pipoly (1998, 2010). Among all of these papers, the most detailed discussion is provided by Pipoly (1996) in treating *Myrsine* of the Philippines.

After an extensive survey, including detailed examination for each of the remaining entities associated with the genus *Rapanea* Aubl., we have determined that the following names are still orphaned and in need of being transferred into *Myrsine*. Any remaining names in *Rapanea* without a corresponding name in *Myrsine* are considered taxonomic synonyms and are not in need of transfer.

1. *Myrsine acutiloba* (Mez) Ricketson & Pipoly, comb. nov. Basionym: *Rapanea acutiloba* Mez, Pflanzenr. (Engler) IV. 236(Heft 9): 390. 1902. TYPE: Colombia. Magdalena: Santa Marta Mpio., Sierra Nevada de Santa Marta, Tomarazon bei Rio Hadea, s.d. (fl.), *H. Karsten s.n.* (holotype, W-0030344, F neg. 31984 [W image]; isotype, F [W fragm.]).

Currently, *Myrsine acutiloba* is known only from the type collection from the Sierra Nevada de Santa Marta in Colombia. Images of the W holotype and the F isotype are available from the respective institutions' web sites.

2. *Myrsine amischocarpa* (A. C. Sm.) Ricketson & Pipoly, comb. nov. Basionym: *Rapanea amischocarpa* A. C. Sm., J. Arnold Arbor. 54(2): 280–281. 1973. TYPE: Vanuatu. Taféa: Aneityum Island, Anelgauhat Bay, 60 m, 12 Feb. 1929 (fr.), *S. Kajewski 751* (holotype, A; isotypes, BISH, K, NY, P, US).

A tree 12–25 m tall in the rainforests and mountain slopes of the Vanikoro Islands (Solomon Islands) and from the islands of Erromango, Ambrym, and Aneityum (Vanuatu). Images of all the listed isotypes are available at JSTOR Plant Science.

3. *Myrsine boivinii* (Mez) Ricketson & Pipoly, comb. nov. Basionym: *Rapanea boivinii* Mez, Pflanzenr. (Engler) IV. 236(Heft 9): 376. 1902. TYPE: Comoros. Mahoré: lisière des bois au pied de Chongui au dessus de Dappani, July 1848 (fr.), *L. Boivin 3268* (lectotype, designated here, G-DEL [barcode] G00359617; isotypes, P [2, barcodes P00184211, P00184212]).

Mez's (1902: 376) original description of *Rapanea boivinii*, "Insel Mayotte (*Boivin* n. 3268. – Herb. Deless., Wien)" indicates the *Boivin 3268* collection as the type, but the collection was listed from two institutions, thus necessitating the need to designate

a lectotype. Unfortunately, Dr. Bruno Wallnöfer, Curator of the Vascular Plant Collections at the Naturhistorisches Museum Wien (W), was unable to locate this material in the collection (Wallnöfer, 2012, pers. comm.). However, the type collection is still represented at G [G00359617] and we elect to designate this collection as the lectotype. An image of the lectotype is available from the G online database, and in addition, images of the two P isotypes (P00184211, P00184212) are available from the P web site. Finally, there is an *L. Boivin* sheet available at W identified as *R. boivinii*; unfortunately, it is without a number and is therefore eliminated from the selection of the lectotype.

4. *Myrsine comorensis* (Mez) Ricketson & Pipoly, comb. nov. Basionym: *Rapanea comorensis* Mez, Pflanzenr. (Engler) IV. 236(Heft 9): 375–376. 1902. TYPE: Comoros. Ngazidja: [Grande Comore], sur le volcan (Vouni), May 1850 (fr.), *L. Boivin s.n.* (lectotype, designated here, W; isotypes, BM [BM000925363], P [2, barcodes: P00184189, P00184190]).

Mez (1902: 376) designated a number of collections from Berlin and Wien as syntypes for his new species *Rapanea comorensis*: "Comoren: Insel Johanna auf Bergen 1500 m. ü. (*Hildebrandt* n. 1692 [B†]), Groß Comoro, auf dem Vulkan 1000–2000 m. ü. (*Kersten* [s.n., Exped. v. d. Decken, B†]), ohne Standortsangabe (*Boivin*, *Humblot* n. 326, 1534). – Herb. Berlin, Wien." Extant syntypes from the last two collections cited by Mez were found: Comoros, Mahoré [Mayotte], Forêt de Combani, 18 Oct. 1884 (fl.), *L. Humblot 326* [in sched., 1326] (BM [barcode] BM000925362, K [barcode] K000226049, P [3, barcodes P00184192, P00184193, P00184194]); and Comoros, Ngazidja [Grande Comore], sur le volcan Anjouan, 1886 (fl., fr.), *L. Humblot 534* [in sched., 1534] (LE, P [2, barcodes P00184195, P00184196], W). Thus, a lectotype needs to be selected from this material. Any material located at the Berlin Herbarium was lost in 1943 (Hiepko, 1987); it is also impossible at this time to determine which of these collections were lost at B. According to Dr. Bruno Wallnöfer, the only collections remaining in the herbarium are the *L. Humblot 534* (1534) and *L. Boivin s.n.* collections (Wallnöfer, 2012, pers. comm.). The *Boivin* collection is annotated by Mez, but the *Humblot* collections do not possess such annotation; thus, we elect to designate the *L. Boivin s.n.* at W as the lectotype. Images of the two P [P00184189, P00184190] isotypes are available at the P web site.

- 5. *Myrsine courboniana*** (Mez) Ricketson & Pipoly, comb. nov. Basionym: *Rapanea courboniana* Mez, Pflanzenr. (Engler) IV. 236(Heft 9): 395. 1902. TYPE: Uruguay. Montevideo: St. Gabriel, 10 May 1854 (fl.), A. Courbon s.n. (holotype, P [barcode] P00649879).

Myrsine courboniana is known only from the Montevideo area of Uruguay. It is interesting to note that there are two A. Courbon collections of *M. courboniana* at Paris (P), both marked as types. However, Mez (1902: 395) clearly designates the material collected in May as the type when he states “Montevideo: bei St. Gabriel (Courbon). – Blüht im Mai (Herb. Paris).” We can only assume that A. Courbon must have discovered the species in fruit in November 1853 and returned to the same area the next May and recollected the type material, unfortunately just after anthesis.

- 6. *Myrsine crassiramea*** (A. C. Sm.) Ricketson & Pipoly, comb. nov. Basionym: *Rapanea crassiramea* A. C. Sm., Bull. Torrey Bot. Club 70(5): 547. 1943. TYPE: Fiji Islands. Mba: Viti Levu, Tholo North, Nandarivatu, 900 m, 16 Dec. 1927 (fr.), J. Gillespie 4374 (holotype, BISH [barcode] BISH1003567).

Myrsine crassiramea is currently known only from the type collection in the Fiji Islands. An image of the type is available at JSTOR Plant Science.

- 7. *Myrsine daphnoides*** (Mez) Ricketson & Pipoly, comb. nov. Basionym: *Rapanea daphnoides* Mez, Pflanzenr. (Engler) IV. 236(Heft 9): 357. 1902. TYPE: India. Near Courtallum, Feb. (fl.), R. Wight 1779 (types, G-BOISS not located, W not located).

According to Mez’s (1902: 357) original description of *Rapanea daphnoides*, the Wight 1779 collection was mixed, “Vorderindien: bei Courtallum (Wight n. 1779 e. p.). – Blüht im Februar (Herb. Boiss.-Barbey, Wien).” Unfortunately, the staff at the Conservatoire et Jardin Botaniques de la Ville de Genève (G) were unable to locate the Boiss.-Barbey type (L. Loze, 2012, pers. comm.). In addition, Dr. Bruno Wallnöfer was also unable to locate this material (Wallnöfer, 2012, pers. comm.). At this time we elect to defer our selection of the lectotype until we are able to locate additional duplicates.

- 8. *Myrsine forbesii*** (Mez) Ricketson & Pipoly, comb. nov. Basionym: *Rapanea forbesii* Mez, Pflanzenr. (Engler) IV. 236(Heft 9): 362. 1902. TYPE: Indonesia-Sumatra. Mt. Tengamoes, Lampongs,

6900–7100 ft. [2103–2164 m], 1881–1882 (fr.), H. Forbes 1870 (lectotype, designated here, L [barcode] L0006815; isolectotypes, A [fragm.], GH, LE).

In Mez’s (1902: 362) original description of *Rapanea forbesii*, he cited two Forbes collections, both from the Berlin Herbarium “Sumatra: ohne Standortsangabe (Forbes n. 1870, 1882. – Herb. Berlin).” Unfortunately both of the Berlin collections were lost in 1943 (Hiepko, 1987). Several duplicates of the Forbes 1870 and 1882 collections are known from the same locality as cited, at A [fragm.], GH, L, and LE, and are available to choose from for the lectotype. Unfortunately, none of the material from the Harvard University Herbaria (A and GH) has been imaged. It is interesting to note that the fragment packets from Arnold Arboretum Herbarium (A [barcode] 00025638) are both mounted together, likely fragments from Gray Herbarium sheets (GH [barcodes] 00025639; 00025640). Although we have not seen the LE material, Imkhanitskaya (1996: 40) indicates that duplicates of both syntypes are available at LE. Fortunately, both the types at L (Forbes 1882 L [barcode] L0006814, and Forbes 1870 L [barcode] L0006815) have been imaged and are available online. Thus, we designate one of these specimens, Forbes 1870 (L [barcode] L0006815), as the lectotype.

- 9. *Myrsine griffithiana*** (Mez) Ricketson & Pipoly, comb. nov. Basionym: *Rapanea griffithiana* Mez, Pflanzenr. (Engler) IV. 236(Heft 9): 360–361. 1902. TYPE: Myanmar. Malacca, s.d. (fl., fr.), W. Griffith 3543 [A] (lectotype, designated here, P [barcode] P00466721; isolectotypes, BR, GH, LE).

In Mez’s (1902: 360–361) original description of *Rapanea griffithiana*, he cited a mixed Griffith collection represented at several institutions: “Birma: ohne Standortsangabe (Griffith n. 3543 (e. p.). – Herb. Berlin, Brüssel, A. Gray, Paris).” The Griffith 3543 collection is mixed from what we here designate the above type material pro parte, as “[A]” and the remaining material, which we have identified as *Myrsine porteriana* A. DC as Griffith 3543 [B]. From the syntypes identified by Mez, the Berlin (B) material was lost in 1943 (Hiepko, 1987). Images are available of the Paris (P [barcode] P00466721) sheet and the Brussels (BR [barcode] BR0000005232284) sheet. Unfortunately, only data, and no image, are available from the Harvard University Herbaria website. Thus, we here elect to designate the P material as lectotype as clearly representative of this species.

- 10. *Myrsine hadrocarpa*** (A. C. Sm.) Ricketson & Pipoly, comb. nov. Basionym: *Rapanea hadrocarpa* A. C. Sm., J. Arnold Arbor. 54(2): 290–291. 1973. TYPE: Fiji Islands. Viti Levu: Kambara, 2–7 Mar. 1934 (fr.), *A. Smith 1245* (holotype, BISH; isotypes, GH, K, NY, S, UC, US).

Myrsine hadrocarpa is a small tree to 8 m tall. It is an endemic species known only from the various island forests of the Fiji Islands.

- 11. *Myrsine longipes*** (A. C. Sm.) Ricketson & Pipoly, comb. nov. Basionym: *Rapanea longipes* A. C. Sm., J. Arnold Arbor. 54(2): 287–288. 1973. TYPE: Samoa. Savai'i: forest above Letui, Tuisivi Range, 1600–1700 m, 26 Sep. 1929 (fr), *E. Christophersen 779* (holotype, BISH; isotypes, K, NY [2], P, UC, US).

Myrsine longipes is a shrub or small tree, 3–5 m tall. It is endemic to the wet montane forests of Samoa.

- 12. *Myrsine polyantha*** (A. C. Sm.) Ricketson & Pipoly, comb. nov. Basionym: *Rapanea polyantha* A. C. Sm., J. Arnold Arbor. 54(2): 289–290, figs. 84–85. 1973. TYPE: Fiji Islands. Viti Levu: Mba prov., summit ridge of Mt. Tomanivi, Victoria, 4 May 1962, *R. Melville, E. Melville & J. Parham 7059* (holotype, K; isotypes, A, BISH, SUVA).

Myrsine polyantha is a small tree, ca. 4 m tall. It is endemic to the forests of the Fiji Islands.

- 13. *Myrsine seychellarum*** (Mez) Ricketson & Pipoly, comb. nov. Basionym: *Rapanea seychellarum* Mez, Pflanzenr. (Engler) IV. 236(Heft 9): 375. 1902. TYPE: Seychelles. Common on mtn. top in Mahe & Silhouette, 1874 (fr.), *J. Horne 442* (lectotype, designated here, K [barcode] K000226047).

In Mez's (1902: 375) original description of *Rapanea seychellarum*, he cited two *J. Horne* collections "Seychellen-Inseln Maho und Pelonette: häufig auf den Gipfeln der Berge (*J. Hooker* [*Horne*] n. 442, 588. – Herb. Kew)." Both collections are still present at K, in fact both are mounted on the same sheet. *Horne 588* (K [barcode] K000226048) is sterile material and *Horne 442* (K [barcode] K000226047) is fertile. We therefore designate the *Horne 442* specimen at K as the lectotype. Images of both the K lectotype and syntype are available online.

- 14. *Myrsine striata*** (Mez) Ricketson & Pipoly, comb. nov. Basionym: *Rapanea striata* Mez, Pflanzenr. (Engler) IV. 236(Heft 9): 357. 1902. TYPE:

India. Malabar, Concan, s.d. (fl.), *J. Stocks & J. Law s.n.* (lectotype, designated here, P [barcode] P00467028; isolectotype, GOET [barcode] GOET008184).

In Mez's (1902: 357) original description of *Rapanea striata*, he cited a single collection by J. Stocks and J. Law "Vorderindien: Malabarküste (*Stocks* u. *Law*)" but failed to designate where the type was located. Of the two syntype duplicates known from P and GOET, the P sheet is by far the better material, and we here designate the material at P as the lectotype (image available online). An image is available of the GOET material at JSTOR Plant Science. It should be mentioned that a third sheet, "India. Karnataka: Mysore District, Bababoodim hills, s.d. (fl), *J. Law s.n.* (K [barcode] K000756358—the image is mistakenly labeled as "*Law 191*," and the "191" is not a collection number but an incomplete year from an annotation label), was rejected as a possible syntype. The sheet does not pose an annotation by Mez and this material is from a different region than the type.

Acknowledgments. We gratefully wish to thank Dr. Bruno Wallnöfer, Curator of the Vascular Plant Collections at the Naturhistorisches Museum Wien (W), Yvette "Tivvy" Harvey of the Royal Botanical Gardens, Kew (K), and Dr. Laurent Gautier, Head Curator – Phanerogams and the staff at the Conservatoire et Jardin Botaniques de la Ville de Genève (G) for their assistance in locating much of this type material. This project was aided greatly by the availability of herbarium images and data online. We deeply appreciate the ability to have public access to the information of the following institutions: A, BISH, BM, BR, F, G, GH, GOET, K, L, NY, P, S, UC, US, W. The Virtual Herbaria Austria project is available at <<http://herbarium.univie.ac.at/database/search.php>>. We also gratefully acknowledge the uses of the JSTOR Plant Science web page at <<http://plants.jstor.org>>. Finally, we appreciate the availability of the Biodiversity Heritage Library, an outstanding project which is "a consortium of natural history and botanical libraries that cooperate to digitize and make accessible the legacy literature of biodiversity held in their collections and to make that literature available for open access and responsible use as a part of a global biodiversity commons" at <<http://www.biodiversitylibrary.org>>.

Literature Cited

- Backer, C. A. & R. C. Bakhuizen van den Brink Jr. 1965. Myrsinaceae. Pp. 194–203 in *Flora of Java* (Spermatophytes only), Vol. 2. P. Noordhoff, Groningen.

- Fosberg, F. R. & M.-H. Sachet. 1975. Polynesian Plant Studies 1–5, 2: *Myrsine* L. in Eastern Polynesia. *Smithsonian Contr. Bot.* 21: 1–25.
- Fosberg, F. R. & M.-H. Sachet. 1980. Systematic Studies of Micronesian Plants. *Smithsonian Contr. Bot.* 45: 1–40.
- Hiepko, P. 1987. The Collections of the Botanical Museum Berlin-Dahlem (B) and their history. *Englera* 7: 219–252.
- Hosaka, E. Y. 1940. A revision of the Hawaiian species of *Myrsine* (*Suttonia*, *Rapanea*) (Myrsinaceae). *Occas. Pap. Bernice P. Bishop Mus.* 16(2): 25–76.
- Imkhanitskaya, N. N. 1996. Type specimens of Myrsinaceae in the Herbarium of Komarov Botanical Institute (St. Petersburg, LE). 3. Palaeotropical taxa of the genera *Myrsine* - *Tapeinosperma*. *Bot. Zhurn. (Moscow & Leningrad)* 81(8): 36–46.
- Jacks, B. R. 2005. Revision of *Myrsine* (Myrsinaceae) in Australia. *Austral. Syst. Bot.* 18(5): 399–438.
- Li, H.-L. 1978. Myrsinaceae. Pp. 47–67, pls. 909–913 in H.-L. Li, T.-S. Liu, T.-C. Huang, T. Koyama & C. Devol (editors), *Flora of Taiwan*, Vol. 4. Epoch Publishing, Taipei.
- Mez, C. C. 1902. Myrsinaceae Pp. 1–437 in H. G. A. Engler, *Das Pflanzenreich. Regni vegetabilis conspectus*. Vol. IV. 236(Heft 9) (Embryophyta siphonogama). Wilhelm Engelmann, Berlin.
- Pipoly III, J. J. 1996. Contributions toward a New Flora of the Philippines: I. A synopsis of the genus *Myrsine* (Myrsinaceae). *Sida* 17(1): 115–162.
- Pipoly III, J. J. 2007. Myrsinaceae of Papua. Pp. 416–428 in A. Marshall & B. Beehler (editors), *The Ecology of Papua. Part One. The Ecology of Indonesia Series*, Vol. VI. Conservation International [Conservation International Periplus Editions (HK) Ltd.], Hong Kong.
- Pipoly III, J. J. & C. Chen. 1995. Nomenclatural notes on the Myrsinaceae of China. *Novon* 5(4): 357–361.
- Pipoly III, J. J. & J. M. Ricketson. 1998. New names and combinations in Neotropical Myrsinaceae. *Sida* 18(2): 503–517.
- Ricketson, J. M. & J. J. Pipoly III. 2010. Nomenclatural transfers in the genus *Myrsine* (Myrsinaceae) for New Caledonia. *J. Bot. Res. Inst. Texas* 4 (2): 627–632.
- Sachet, M.-H. 1975. *Flora of Marquesas*, 1: Ericaceae–Convolvulaceae. *Smithsonian Contr. Bot.* 23: 1–34.
- Smith, A. C. 1973. *Studies of Pacific Island Plants*, XXV. The Myrsinaceae of the Fijian Region. *J. Arnold Arbor.* 54(2): 1–41.
- Takeuchi, W. N. & J. J. Pipoly III. 2009. Nomenclatural transfers in East Malesian *Myrsine* (Myrsinaceae), and the description of *M. warrae*, a distinctive new species from ultrabasic environments in Papua New Guinea. *Edinburgh J. Bot.* 66 (3): 459–467.
- Wagner, W. L., D. R. Herbst & S. H. Sohmer. 1990. Myrsinaceae. Pp. 931–947, pls. 131–133 in *Manual of the Flowering Plants of Hawai'i*. Revised edition. University of Hawaii Press, Bishop Museum Press, Honolulu.